

FURTHER OBSERVATIONS UPON THE FISHES
AND FISHING INDUSTRIES OF TASMANIA,
TOGETHER WITH A REVISED LIST OF
INDIGENOUS SPECIES.

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It is now about eight years since my first Catalogue of the Fishes of Tasmania was presented by me to the members of this Society. Since that time I have occasionally published an account of other species not embraced in my original list. Messrs. A. Morton, F.L.S., and Saville-Kent, F.L.S., have also made two or three interesting contributions, and have added considerably to our knowledge of the indigenous fishes of the island. In this way the 188 species then known have increased to 214 species. As it is desirable that a fresh catalogue should be prepared, embracing all the species known at the present time, I have much pleasure in submitting the following additional observations regarding our fishes and fishing industries, together with a list of the principal edible fishes, and a complete classified list of all the fishes known to me at the present time.

The Tasmanian student has now also the great advantage of reference to the splendid "Catalogue of Australian Fishes," prepared by the Hon. William Macleay, to whom the author acknowledges himself greatly indebted for valuable guidance and information.

FISHES.

The known sea and inland fishes of Tasmania, including the eight species of European fresh-water fishes successfully acclimatised, number 214 species. These are generally grouped by naturalists under 4 sub-classes, 65 families, and 146 genera. About one-third of the number stated may be considered good edible fish, although only about 21 species are caught in sufficient number to form a market supply. The following are the local names of those found in greatest abundance, the first six alone forming articles of export*—The Hobart Trumpeter, Perch (*Chilodactylus*), Snotgall Trevally, Barracouta, Kingfish, Conger Eel, Native Salmon,

* For further particulars regarding Natural History and Classification, see Report of the Tasmanian Fisheries Commission, 152 pp., 1882; and General and Critical Observations on the Fishes of Tasmania, with a Classified Catalogue of all the Known Species, by the Author (Proc. Roy. Soc. of Tasmania, 1882).

Bastard Trumpeter, Red Perch, Rock Gurnet, Flathead, Horse Mackerel, Sea Mullet, Rock Cod, Ling, Flounder, Sole, Garfish, Common Eel.

The first of these, the Hobart Trumpeter, is undoubtedly the king of Tasmanian Fishes, and is generally esteemed as the finest of the Australian edible fishes. It commands a high price and ready sale in the local market as well as in the neighbouring colonies; but, unfortunately, although captured in considerable numbers all the year round, it is very limited in its distribution, being confined to certain coral reefs or banks 10 to 70 fathoms deep fringing the southern coasts of Tasmania between Granville Harbour in the west and Seymour in the east.

The Barracouta, Kingfish, and Rock Cod appear periodically in such vast numbers that frequently the supply is greatly in excess of local demand. Owing to the absence of proper fish-curing establishments, large quantities have, at times, been known to be wasted or merely utilised as manure.

It is known also that large schools of Sand-smelts, Sprats and Anchovies appear upon our coasts at regular seasons, but, for the reasons already mentioned, and because the fishermen lack the proper appliances in the shape of *Pilchard Seine* nets, no attempt hitherto has been made to open up an industry in this particular direction.

Trawl-nets have been tried on the coast, but without good result. Either the class of bottom fish is absent in our waters, or the proper grounds have yet to be discovered suited for this mode of capture.

Besides the fishes proper, the fishing industry is largely dependent upon the capture of a fine species of Crayfish (*Palinurus Edwardsii*), which often weighs, when mature, from 6 to 7lbs. It is estimated that there are over 280 tons of this highly prized Crustacean brought to market yearly, including those exported to Victoria and New South Wales, but excluding those used for baiting purposes and those captured by Victorian boats. There is also a small Prawn taken in considerable quantities during the season in the River Tamar. They abound all round our coasts, but little attention has been devoted to them anywhere on the coast beyond the River Tamar.

Of Molluscs there is only one of any importance,—viz., the Common Mud Oyster. Although not now abundant, it is estimated by competent authorities that about 20 years ago the various beds yielded about 44,000 bags, or 22,000,000 oysters per year.

The destruction of these once prolific Oyster beds have engaged much attention. Although attributed generally to reckless unrestricted dredging, continued until the greater number of the beds were wholly destroyed, it is believed by

some that natural causes were operating concurrently with the causes alleged. Attempts have recently been made to extend the cultivation of the Oyster in the old habitats with great promise of success. Natural conditions again seem to be working round in favour of the development of the Oyster. The prolific fall of Spat during the last two or three years in the natural beds at Cole's Bay and Little Swanport, and their rapid growth there, promise well for the future of the new centres where artificial beds are laid down, at Spring Bay and elsewhere.

The following is a more extended List of the Edible Fishes brought to market in more or less abundance, according to the kind and season:—

LIST OF THE PRINCIPAL EDIBLE FISHES IN TASMANIAN WATERS.

^aAbundant all the year round.

^bAbundant during the season.

^cCommon all the year round.

^dCommon during the season.

^eNot uncommon ditto.

^fNot uncommon ditto.

PERCIDÆ (Perch Family).

Anthias rasor	<i>Red Perch</i> ^d	Season, winter.
Lates colonorum	<i>Brackish Water Perch</i> ^a	Confined to Anson's River.
Arripis truttaceus	<i>Native Salmon</i> ^a	Periodically enter estuaries in schools.

SPARIDÆ (Bream Family).

Girella tricuspidata	<i>Black Bream</i> ^d	{ Season, October to March. C. Australis enters brackish water lagoons and mouths of rivers for spawning purposes.
" simplex	<i>The Sweep</i> ^d	
Chrysophrys Australis	<i>Silver Bream</i> ^d	

CIRRHITIDÆ (Trumpeter Family).

Chilodactylus Allporti	<i>Carp</i> ^d	Season, January to March.
" macropterus	<i>Perch</i> ^a	{ Height of season (mature), April to August. The most excellent of all Tasmanian fish. Sometimes reaches a weight of 60lbs. Abundant during season, January to March. Rivals the Real Trumpeter at this stage. Immature form ; good, but not equal to mature form.
" vizonarius	<i>Magpie Perch</i> ^f	
Latris hecateia	<i>Trumpeter</i> ^a	
" Forsteri	{ <i>Silver Bastard</i> ^b <i>Red Bastard</i> ^a	
Mendosoma Allporti	<i>Real Bastard</i> ^e	

SCORPÆNIDÆ (Gurnet Family).

Sebastes percoides	<i>Rock Gurnet^c</i>	Found on the outer reefs.
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TRICHIURIDÆ (Barracouta Family).

Lepidopus caudatus	<i>Frostfish^f</i>	Caught at odd times—winter.
Thyrsites atun	<i>Barracouta^b</i>	Important food fish. Caught in vast numbers, November to August.
" Solandri	<i>Kingfish^b</i>	Season, December to June. Come and go in vast numbers, but disappear in some years altogether.

CARANGIDÆ (Horse Mackerel Family).

Trachurus trachurus	<i>Horse Mackerel^b</i>	Season, Jan. to April.
Caranx Georgianus	<i>Silver Trevally^b</i>	Enter Tamar and other rivers, midwinter.
Seriola grandis	<i>Tasmanian Yellow-tail^b</i>	Abundant Northern Coast, March to April.
Neptonemus brama	<i>Snotgall^b</i>	Season, March to April.
" dobula	<i>Mackerel Trevally^b</i>	Ditto, entering estuaries in large schools.

CYTTIDÆ (Dory Family).

Cyttus Australis	<i>Bastard Dory^d</i>	Enter estuaries in schools, but seldom captured.
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TRACHINIDÆ (Whiting Family).

Uphritis Urvillii	<i>Sandy^a</i>	Abundant in the River Jordan and East Coast rivers.
Sillago ciliata	<i>Whiting^d</i>	One of the most delicious fishes in our estuaries.

COTTIDÆ (Flathead Family).

Platycephalus Bassensis	<i>Common Flathead^a</i>	A very fine fish, though repulsive looking. Abundant on sandy bottoms.
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ATHERINIDÆ (Silver Belly Family).

Atherina presbyter-	} <i>Silver Bellies</i>	
oides		
" hepsetoides		
" hepsetus		
" microstoma		
" Tamarensis		

These little fishes are found everywhere in vast shoals. Although seldom exceeding 5 inches long, they form a delicious article of food. No trouble is taken to capture them for market.

MUGILIDÆ (Mullet Family).

Mugil cephalotus	<i>Sand Mullet</i> ^a	Excellent fish. Found on the northern and eastern coasts.
Agonostoma Forst- eri	<i>Estuary Mullet</i> ^a	Caught chiefly by hand-rod, in large numbers.

LABRIDÆ (Parrot Fish Family).

Cossyphus cerulæus	<i>Blue Head</i> ^a	Abundant, and although good food, it is not brought to market.
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GADOPSIDÆ (Blackfish Family).

Gadospis marmor- atus	<i>Freshwater Black- fish</i> ^a	An excellent fish, peculiar to our northern rivers.
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GADIDÆ (Cod Family).

Pseudophycis barb- atus	<i>Rock Cod</i> ^a	Excellent fish, well suited for smoking. Very numerous during winter.
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OPHIIDÆ (Ling Family).

Genypterus odes	blac <i>The Ling</i> ^e	Very fine fish.
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PLEURONECTIDÆ (Flounder Family).

Rhombsolea mono- pus	<i>Flounder</i> ^a	Excellent table fish.
Amnotretis rostra- tus	<i>Sole</i> ^e	Abundant in some estuaries.

SALMONIDÆ (Salmon Family).

Retropinna ardsoni	Rich- <i>Whitebait or Smelt</i>	Enters estuaries in large shoals. Though only 3 to 4 inches long, they are very delicious
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Salmo salar	The Salmon
" trutta	Sea Trout ^b
" fario, v. An-sonii	Brown Trout ^b
" fontinalis	American Trout ^b

These valuable fishes have all been successfully introduced from the United Kingdom. The three last species are very abundant now in our rivers and seas. The Brown Trout sometimes reaches a weight of 32lbs.

HAPLOCHITONIDÆ (Grayling Family).

Prototroctes æna	mar- Cucumber Mullet ^b or Grayling
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This fine little fish is the most delicious of our freshwater fish. It is found abundantly in the Mersey and northern and western rivers. Affords excellent sport to anglers

GALAXIDÆ (Jolly-tail Family).

Galaxias truttaceus	Spotted Trout ^a
" attenuatus	Jolly Tail ^a
" auratus	Golden Trout ^e

Small fish, very abundant in all our streams. Excellent for the table and caught readily by rod and line. Largest form, Lake Sorell.

SCOMBRESOCIDÆ (Garfish Family).

Hemirhamphus intermedius	Garfish ^b
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Excellent fish for the breakfast table. Season, April-October.

CLUPEIDÆ (Herring Family).

Engraulis encrasicolus	Anchovy ^b
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Enters estuaries in large numbers during summer.

Clupea sprattus	Sprat ^b
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Great shoals, Aug.-Nov.

No attempt has yet been made to utilise these valuable fishes, owing to the absence of appliances and to the lack of enterprise in the shape of fish-curing establishments.

MURÆNIDÆ (Eel Family).

Anguilla Australis	Common Eel ^a
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No proper appliances exist for the capture of these valuable fish.

Conger vulgaris	Conger ^a
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Valuable market fish, sometimes attains a weight of 40 lbs.

Sharks of various kinds are abundant, and although the smaller forms, such as *Mustelus*, are edible, they are not utilised as food.

Galeus canis (Dog Fish) is captured largely in certain localities, and the liver is boiled down for oil. The fishermen also largely use the flesh of "Gummies" and "Dog Fish" as bait for the deep-sea Trumpeter fishing.

The following is a classified synopsis of all the known Fishes of Tasmania, embracing 65 families, 146 genera, and 214 species:—

SYNOPSIS OF TASMANIAN FISHES OF ALL KINDS.

SUB-CLASS TELEOSTEI.

Family.	Genera.	Species.	Examples.
Percidæ	12	13	Red Perch, Native Salmon
Squamipinnes	1	1	Scorpi
Mullidæ	1	1	Red Mullet
Sparidæ	4	5	Bream, Schnapper
Hoplognathidæ	1	1	Hoplognathus
Cirrhitidæ	5	14	Carp, Perch, Trumpeter
Scorpænidæ	5	7	Gurnet, Soldier
Berycidæ	2	2	Nannegai
Kurtidæ	1	1	Pempheris
Sciænidæ	1	2	Maigre
Xiphiidæ	1	1	Swordfish
Trichiuridæ	2	4	Barracouta, Kingfish
Carangidæ	5	8	Horse Mackerel, Snotgall
Cyttidæ	2	2	Bastard Dory
Scombridæ	5	5	Mackerel, Pilotfish
Trachinidæ	5	6	Catfish, Whiting
Pediculati	1	2	Handfish
Cottidæ	3	5	Flathead, Flying Gurnard
Gobiidæ	2	2	Goby
Gobiesocidæ	1	1	Gobiesox
Blenniidæ	6	8	Blenny, Bully
Sphyrænidæ	2	2	Jack, Pike
Atherinidæ	2	6	Sand-smelt, Silver Belly
Mugilidæ	2	2	Mullet, Sand Mullet
Centriscidæ	1	1	Snipe, or Trumpet-fish
Gobiesocidæ	1	1	Crepidogaster
Lophotidæ	1	1	Lophotes
Trachypteridæ	2	2	Ribbon Fish
Pomacentridæ	1	1	Rock Perch
Labridæ	4	13	Blue Head Stranger, Parrot-fish
Gadopsidæ	1	1	Blackfish
Gadidæ	2	2	Rock Cod
Ophidiidæ	2	2	Ling
Macruridæ	2	2	Coryphæna
Pleuronectidæ	3	4	Sole, Flounder
Haplochitonidæ	2	2	Derwent Smelt, Freshwater Herring
Scopelidæ	1	1	Alepidosaurus
Salmonidæ	2	5	Salmon, Whitebait
Galaxidæ	1	5	Spotted Trout, Jolly-tail
Scombresocidæ	1	1	Garfish
Cyprinidæ	2	3	Carp, Tench
Gonorhynchidæ	1	1	Sand Eel
Clupeidæ	2	3	Anchovy, Sprat
Synbranchidæ	1	2	Chilobranhus
Muræindæ	4	5	Common Eel, Conger

Pegasidæ	1	1	Sea-dragon
Syngnathidæ	5	9	Pipefish, Sea-horse
Sclerodermi	2	12	Leather Jacket, Trunkfish
Gymnodontes	4	5	Toad Fish, Porcupine Fish
Total Teleostei			
(49)	121	186	

SUB-CLASS CHRONDROPTERYGII (Sharks and Rays).

SHARKS.

Chimæridæ	1	1	Elephant-fish
Carcharidæ	4	4	Blue Shark, Tope, Gummy
Lamnidæ	3	3	Porbeagle, Nurse, Thrasher
Notidanidæ	1	1	Tasmanian Blue Shark
Scyllidæ	3	4	Wobbegong
Cestracionidæ	1	1	Port Jackson Shark
Spinacidæ	1	2	Spiny Dog
Rhinidæ	1	1	Angel Shark
Pristiophoridæ	1	2	Sawfish

RAYS.

Rhinobatidæ	1	1	The Fiddler
Torpedinidæ	1	1	Electric Torpedo
Rajidæ	1	1	Thorn-back Skate
Trygonidæ	1	1	Stingaree
Myliobatidæ	1	1	Whip-tail Ray

Total Sharks		
and Rays	21	24

SUB-CLASS CYCLOSTOMATA.

Petromyzontidæ	2	2	Lamprey, Pouched Lamprey

SUB-CLASS LEPTOCARDII.

Cirrostromi	1	1	Lancelet

SUMMARY.

Sub-class	Families.	Genera.	Species.
Teleostei	49	122	186
Chrondropterygii	14	21	24
Cyclostomata	1	2	2
Leptocardii	1	1	1
Grand Total	65	146	214

COMPLETE LIST OF TASMANIAN SPECIES.

SUB-CLASS TELEOSTEI.

Fam. PERCIDÆ. (13.)

- Perca fluviatilis*, *Rondel.* (L.) English River Perch.
Callanthias Allporti, *Gunth.* (T.) Allport's Perch. D. 11 : 10.
 A. 3 : 10. L. lat. 46.
Enoplosus armatus. Old Wife. D. 7 : 1·14-15. A. 3·15.
Anthias rasor, *Rich.* (A.) Red Perch : Barber. D. 10 : 21. A.
 3 : 9. L. lat. 54. L. tr. 4 : 18.
Microperca Tasmaniae, *Johnston.* (A.) Native Perch. D. 8 : 1·7-8.
 A. 3·8 : V. 1·5. L. lat. 28-30 : L. tr. 12.
Lates colonorum, *Gunth.* (A.) Brackish Water Perch. D.
 8 : 1-10. A. 3·8. L. lat. 55. L. tr. 8 : 21.
Oligorus gigas, *Owen.* (A.) Hapuka. (T.Z.) D. 11 : 12. A. 3·8.
Eurumetopos Johnstonii, *Morton.* (T.)
Apogon Guntheri, *Cast.* A. Brackish Water Perch. D. 7 : 1-9 :
 L. lat. 26. L. tr. 11-12.
Apogon Lemprieri, *Johnston.* (T.) D. 6 : 1-10. A. 2·9. L. lat. 27.
 L. tr. 3-10.
Arripis truttaceus, *Cuv. and Val.* (A.Z.) Native Salmon.
 D. 9 : 16-17. A. 3 : 10. L. lat. 48-52. L. tr. 6 : 12.
Histioporus recurvirostris, *Rich.* (A.) Boar Fish. D. 9 : 15.
 A. 3·10-11. P. 18. L. lat. 130.
Erythrichthys nitidus, *Rich.* (A.Z.) D. 9 : 3 : 1·9-10. A. 5·10.
 L. lat. 96. L. tr. 8 : 20.

Fam. SQUAMIPINNES. (1.)

- Scorpius Georgianus*, *Cuv. and Val.* (A.) D. 9 : 26. A. 3 : 27.

Fam. MULLIDÆ. (1.)

- Upeneus porosus*, *Cuv. and Val.* (A.Z.) Red Mullet. D. 8 : 1-8.
 A. 7. L. lat. 30.

SPARIDÆ. (5.)

- Girella tricuspidata*, *Cuv. and Val.* (A.) Black Bream. D.
 15·11-13. A. 3·11-12. L. lat. 50. L. tr. 10-11 : 20-23.
Girella simplex, *Rich.* (A.) The Sweep. D. 14-15 : 12-13. A.
 3·11-12. L. lat. 55. L. tr. 11-12 : 20-23.
Haplodactylus arctidens, *Rich.* (T.) Marbled Kelp Fish. D.
 15-16 : 18-20 : A. 3·7 : P. $\frac{10-2}{6}$
Chrysophrys Australis, *Gunth.* (A.) Silver Bream. D. 11 : 10-11.
 A. 3·8. L. lat. 44-45 : L. tr. 5 : 13.
Pagrus unicolor, *Cuv. and Val.* (A.Z.) Schnapper. D. 12·10.
 A. 3·8. L. lat. 52. L. tr. 8 : 17.

Fam. HOPLOGNATHIDÆ. (1.)

- Hoplognathus Conwayii*, *Rich.* Hoplognathus. D. 12 : 12. A. 3·12.

Fam. CIRRHITIDÆ. (14.)

- Chironemus marmoratus*, *Gunth.* (A.) Large Kelp Fish. D. 14 : 1-18. A. 3·6. L. lat. 55.
- Chilodactylus spectabilis*, *Hutton.* (T.Z.) D. 17 : 26. A. 3·6. L. lat. 55.
- Chilodactylus Allporti*, *Gunth.* T. Carp. D. 17 : 25-28. A. 3·9. P. 8·6. L. lat. 55-56.
- Chilodactylus carponemus*, *Park.* (T.) Great Perch D. 17 : 31-32. A. 3·17-18. L. lat. 64.
- Chilodactylus macropterus*, *Rich.* (A.) Black Silver Perch. D. 17-18 : 25-28. A. 3·12-14. P. 9·6. L. lat. 55 : 4-5. L. tr. 6 : 13-15.
- Chilodactylus nigripes*? *Rich.* Black Silver Perch. D. 18 : 26. A. 3·10. L. lat. 61. 5 simple pectoral rays.
- Chilodactylus nigricans*, *Rich.* (A.) Black Butter Fish.
- Chilodactylus vizonarius*, *Kent.* (T.) Magpie Perch. D. 17 : 26-33. A. 3·9-10. L. lat. 63. 6 simple pectoral rays.
- Nemadactylus concinnus*? *Rich.* (T.) Magpie Perch. D. 17 : 28. A. 3·15. L. lat. 50.
- Latris hecateia*, *Rich.* (T.Z.) Trumpeter. D. 17 : 1·36-38. A. 3·28-30. P. 9·8-9. L. lat. 100.
- Latris Forsteri*, *Cast.* (A.) Bastard Trumpeter. D. 16 : 1·37-42. A. 3·33-36. P. 9-10·8-9. L. lat. 115-120.
- Latris ciliaris*, *Forst.* (A.Z.) Moki. D. 17 : 39. A. 3·32. L. lat. 84. P. 6.
- Latris Mortoni*? *Kent.* (T.) Morton's Trumpeter. (Teeth on Vomer. L. lat. 110.)
- Mendosoma Allporti*, *Johnston.* Real Bastard. D. 23 : 1·25-26. A. 3·18-19. P. 15-16. L. lat. 72-74.

Fam. SCORPÆNIDÆ. (7.)

- Sebastes percoides*, *Soland.* (A.Z.) Gurnet. D. 11 : 1·12. A. 3·5. L. lat. 60-65.
- Scorpæna cruenta*, *Soland.* (A.Z.) Little Gurnet. D. 11 : 1·10. A. 3·5. L. lat. 45?
- Scorpæna panda*, *Rich.* (A.Z.) D. 12 : 1·8. A. 3·5. L. lat. 67.
- Holoxenus Guntheri*, *Johnston.* (T.) Velvet Fish. D. 8 : 5·10. A. 3·9. C. 12-13. V. 1·5.
- Holoxenus cutaneus*, *Gunth.* (T.) D. 7 : 3·10. A. 9. C. 12. V. 1·5.
- Pentarogeton marmorata*, *Cuv. and Val.* (A.) Soldier. B. 7. D. 12-13 : 10. A. 3·6.
- Glyptauchen panduratus*, *Rich.* (A.) D. 17 : 7. A. 3·6. V. 1·5.

Fam. BERYCIDÆ. (2.)

- Beryx affinis*, *Gunth.* A. Nannegai. D. 7 : 12. A. 4 : 12-13. V. 1 : 7. L. lat. 41-43. L. tr. 6 : 12.
- Trachichthys Macleayi*, *Johnston.* D. 5 : 13. A. 3·10. V. 8. L. lat. 50. 13 scutes.

Fam. KURTIDÆ. (1.)

- Pempheris macrolepis*, *Macleay.* (A.) D. 4-5 : 12. A. 3·33-36.

Fam. SCIÆNIDÆ. (2.)

- Sciæna antarctica*, *Cast.* A. Victorian Kingfish. D. 9 : 1·27.
A. 2·7. P. 17. L. lat. 68.
Sciæna aquila? *Lacep.* (E.) Maigre. D. 10 : 1·26-27. A. 2·7.
L. lat. 53.

Fam. XIPHIIDÆ. (1.)

- Histiophorus Herschelli*, *Gray.* Swordfish.

Fam. TRICHIURIDÆ. (4.)

- Lepidopus caudatus*, *White.* Frostfish. D. 102-104. A. 24-25.
Thyrsites atun, *Cuv. and Val.* Barracouta. D. 20 : 1-10 : VI.
A. 1·10 : VI.
Thyrsites micropus? *M'Coy.* D. 17 : 4·12 : VI. A. 2·11 : IV.
VI. 1. P. 14.
Thyrsites Solandri, *Cuv. and Val.* Kingfish. D. 17-18 : 1·17-18 :
I-II. A. 1·13-18 : II. P. 14-15.

Fam. CARANGIDÆ. (8.)

- Trachurus trachurus*, *Cuv. and Val.* (A.Z.) Horse Mackerel.
D. 8 : 1·32-35. A. 2 : 1·25-29. L. lat. 75-86.
Caranx Georgianus, *Cuv. and Val.* (A.) Silver Trevally. D.
8 : 1·26-29. A. 2 : 1·22-24. L. lat. 20-25.
Seriola Lalandii, *Cuv. and Val.* (A.) Port Jackson Kingfish.
D. 7 : 1·32-34. A. 2 : 1·20-21.
Seriola grandis, *Cast.* A. Tasmanian Yellow Tail. D. 6 : 1·32-35.
A. 0 : 1·20. P. 21. V. 5.
Neptonemus brama, *Gunth.* (T.) Snotgall Trevally. D. 7 : 2·27-29.
A. 2 : 1·22-23. L. lat. 88.
Neptonemus dobula, *Gunth.* (T.) Mackerel Trevally. D.
7 : 1·37-40. A. 2 : 1·23.
Neptonemus travale? *Cast.* (A.) Port Jackson Snotgall. D.
6 : 2 : 30. A. 2 : 2·21. L. lat. 93.
Temnodon saltator. *Bl.* Skipjack. D. 8 : 1·24-26. A. 1-2 : 1·26-28.
L. lat. 90-100.

Fam. CYTTIDÆ. (2.)

- Cyttus Australis*, *Rich.* (A.Z.) Bastard Dory. B. 8. D. 8-9 : 1·28-29.
A. 2·30. P. 11. V. 1·6.
Zeus Australis, *Rich.* (A.Z.) John Dory. D. 10 : 23. A. 4·22.
V. 1·6.

Fam. SCOMBRIDÆ. (6.)

- Gasterochisma melampus*, *Rich.* (Z.) Butterfly Fish. B. 7.
D. 17 : 1·10 : VI. V. 1·5. A. 2·10 : VI. P. 21. L. lat. 64.
L. tr. 27.
Scomber Australasicus, *Cuv. and Val.* Australian Mackerel.
D. 10 : 1·11 : V. A. 1 : 1·11 : V. L. lat. 160.
Thynnus thynnus, *L.* The Tunny. D. 14 : 1·13 : IX. A.
2·12 : VIII.
Auxis Rochei, *Risso.* A. D. 10-11 : 12. VIII : A. 12-14. VII.
Naucrates ductor, *L.* Pilot Fish. D. 3-6 : 1·26-28. A. 2·16-17.
Echeneis remora, *L.* Sucking Fish. D. 16-18 : 22-24. A. 25.

Fam. TRACHINIDÆ. (6.)

- Kathetostoma læve, *Bl.* (A.Z.) Cat Fish. D. 17. A. 17. V. 1-5.
 Percis Allporti, *Gunth.* (T.) D. 5 : 21. A. 16. L. lat. 62. L. tr.
 $3\frac{1}{2}$: 15.
 Uphritis Urvillii, *Cuv* and *Val.* (T.) Sandy. D. 6 : 19. A. 25.
 L. lat. 65.
 Sillago ciliata, *Cuv.* and *Val.* (A.) Whiting. D. 11 : 17-18.
 A. 2-18-19. P. 14-15. L. lat. 70. L. tr. 4-5 : 11-12.
 Sillago maculata? *Quoy* and *Gaim.* (A.) Spotted Whiting.
 D. 11 : 1-20. A. 1-21. L. lat. 70. L. tr. 5-6 : 7.
 Bovichthy's variegatus, *Rich.* D. 8 : 18. A. 13.

Fam. PEDICULATI. (2.)

- Brachionichthys hirsutus, *Lacep.* (A.) Handfish. D. 1 : 2 : 16-19.
 A. 9. P. 7. V. 1-4.
 Brachionichthys politus, *Rich.* (A.) Red Handfish. D. 1 : 2 : 17.
 A. 9. V. 1-4.

Fam. COTTIDÆ. (5.)

- Platycephalus Bassensis, *Cuv.* and *Val.* (A.) Common Flat-
 head. D. 1 : 7 : 14. A. 14. L. lat. 115.
 Platycephalus cinereus, *Gunth.* (A.) Black Flathead. D. 1 : 7 : 12.
 A. 17. L. lat. 70.
 Lepidotrigla vanessa, *Rich.* (A.) Butterfly Gurnard. D. 11 : 17.
 A. 17. L. lat. 70.
 Trigla polyommata, *Rich.* (A.) Flying Gurnard. D. 7-9 : 12-13.
 A. 12.
 Trigla kumu, *Less.* and *Gaim.* (A.Z.) Kumu Gurnard.
 D. 9-10 : 16-17. A. 15.

Fam. GOBIIDÆ. (2.)

- Gobius Tamarensis, *Johnston.* (T.) Goby. B. 4. D. 6 : 1-8. A. 1-8.
 L. lat. 32. P. 16-18. C. 18-19.
 Callionymus lateralis, *Macleay.* (A.) D. 4 : 8. A. 8.

Fam. BLENNIIDÆ. (8.)

- Blennius Tasmanianus, *Rich.* (T.) Blenny or Bully. B. 6. D.
 12 : 17-18. A. 2-19. P. 14.
 Salarias meleagris, *Cuv.* and *Val.* (A.) Blenny. D. 12 : 20.
 A. 22.
 Clinus despicillatus, *Rich.* (A.) Blenny. D. 3-35-4. A. 2-25.
 V. 1-3.
 Clinus Johnstoni, *S. Kent.* (T.) Johnston's Blenny. D. 2-3 :
 32-33 : 5. A. 2-25-26. V. 1-3.
 Cristiceps Australis, *Cuv.* and *Val.* (A.) Blenny. D. 3-27-29-5-8.
 A. 2-23-25. V. 1-3.
 Cristiceps Forsteri, *Cast.* (A.) Blenny. D. 3-29-4. A. 26.
 V. 1-3.
 Tripterygium Clarkei, *Morton.* T. Blenny.
 Pataecus armatus, *Gunth.* (A.) Pataecus. D. 32. A. 11. P. 8.

Fam. SPHYRÆNIDÆ. (2.)

Sphyræna Nova-Hollandiæ, *Gunth.* (A.) D. 5 : 1·9. A. 1·10.
L. lat. 135.

Lanioperca mordax, *Gunth.* (A.) Tasmanian Jack. D. 5 : 1·19.
A. 2·25-29. P. 16. L. lat. 61.

Fam. ATHERINIDÆ. (6.)

Athernia presbyteroides, *Rich.* Silver Belly, Sand-smelt. D.
9 : 10-11. A. 1·12. P. 11.

Atherina hepsetoides, *Rich.* Silver Belly. D. 9 : 1·11. A. 1·14.
P. 15.

Atherina hepsetus, *L.* Silver Belly.

Atherina microstoma, *Gunth.* Silver Belly. D. 6 : 1·10. A. 1·12.
P. 12. L. lat. 40. L. tr. 8.

Atherina Tamarensis, *Johnston.* (T.) Silver Belly. 8 : 1 : 11.
A. 1·10-11. P. 13. L. lat. 42. L. tr. 9.

Atherenichthys Jacksoniana, *Quoy* and *Gaim.* D. 8 : 1·11.
A. 1·18.

Fam. MUGILIDÆ. (2.)

Mugil cephalotus, *Cuv.* and *Val.* (A.) Sand Mullet. D. 4 : 1·8.
A. 3·7-8. L. lat. 38-40. L. tr. 14-15.

Agonostoma Forsteri, *Bl.* Sea Mullet, Estuary Mullet. D. 4 : 1·10.
A. 3·12. L. lat. 55.

Fam. CENTRISCIDÆ. (1.)

Centriscus scolopax, *L.* (A.) Snipe, Bugler, or Trumpet Fish.
B. 4. D. 5 : 12. A. 20. P. 16.

Fam. GOBIESOCIDÆ. (2.)

Crepidogaster Tasmaniensis, *Gunth.* (A.) B. 5. D. 10. A. 9.

Gobiesox cardinalis, *Ramsay.* (T.)

Fam. LOPHOTIDÆ. (1.)

Lophotes Guntheri, *Johnston.* (T.) Lophotes.

Fam. TRACHYPTERIDÆ. (2.)

Regalecus gladius, *Cuv.* and *Val.* Ribbon Fish. B. 6. D. 342.
A. 0. C. 0. P. 14. V. 1.

Trachypterus altivelis, *Kner.* Paper Fish. B. 6. D. 7 : 190. A. 0.
C. 6 : 4-6. P. 11. V. 7.

Fam. POMACENTRIDÆ. (1.)

Glyphidodon Victoriæ. Rock Perch. D. 13 : 17. A. 2 : 15.
L. lat. 30. L. tr. 4 : 10.

Fam. LABRIDÆ. (13.)

- Cossyphus cerulæus*, *Ogilby*. (A.) Blue Head.
- Cossyphus unimaculatus*, *Gunth*. (A.) D. 12 : 11. A. 3·12.
L. lat. 36. L. tr. 6·12.
- Labrichthys bothryocosmus*, *Rich*. (A.) Parrot Fish. D. 9 : 11 :
A. 3·10. L. lat. 27. L. tr. 3 : 9.
- Labrichthys Mortoni*, *Johnston*. Golden Parrot Fish. D. 9 : 11.
A. 3·10. L. lat. 23.
- Labrichthys fucicola*, *Rich*. Purple Parrot Fish. B. 6. D. 9 : 11.
A. 3·10. L. lat. 27. P. 13.
- Labrichthys psittacula*, *Rich*. Parrot Fish. D. 9 : 11. A. 3·10.
L. lat. 27. L. tr. 3·9.
- Labrichthys laticlavus*, *Rich*. Blue-streak Parrot Fish. D. 9 : 11.
A. 3·10. L. lat. 26. L. tr. 3·9.
- Labrichthys tetrica*, *Rich*. Parrot Fish. D. 9 : 11. A. 3·10.
L. lat. 27. L. tr. 3·9.
- Labrichthys Cuvieri*, *Cast*. Parrot Fish. D. 9 : 11. A. 3·10.
L. lat. 27.
- Odax balteatus*, *Cuv. and Val*. Ground Mullet. D. 15-17 : 12-13.
A. 3·12-13. L. lat. 39.
- Odax Richardsoni*, *Gunth*. Stranger. D. 17 : 13-14. A. 3·10-12.
L. lat. 60. L. tr. 7 : 20.
- Odax Beddomei*, *Johnston*. Beddome's Odax. D. 20 : 12. A. 3·9.
L. lat. 40. L. tr. 3·8-9.
- Olistherops Brownii*, *Johnston*. Brown's Olistherops. D. 10 : 18.
A. 3·9. L. lat. 58-60. L. tr. 7·14.

Fam. GADOPSIDÆ. (1.)

- Gadopsis marmoratus*, *Rich*. Freshwater Blackfish. B. 6. D.
10-13 : 25-26. A. 3 : 18-19. V. 1.

Fam. GADIDÆ. (2.)

- Lotella Swanii*. *Johnston*. Kelp Cod. B. 7. D. 4 : 60. A. 55.
V. 8. P. 22-23. L. lat. 200.
- Pseudophycis barbatus*, *Gunth*. Rock Cod. D. 9-11 : 48-57.
A. 44-57. V. 5. L. lat. 100-140.

Fam. OPHIDIIDÆ. (2.)

- Genypterus Australis*, *Cast*. Ling. B. 7. D. 159. A. 123-126.
P. 19. L. lat. 261-307.
- Fierasfer Homei*, *Rich*. Home's Ling. B. 7. Fins very low.
Continuous.

Fam. MACRURIDÆ. (2.)

- Macrurus Australis*, *Rich*. (A.) D. 13·88. A. 87. V. 7. L. lat. 130.
L. tr. 4 : 15.
- Coryphænoides Tasmaniae*, *Johnston*. (T.) Tasmanian Whip-tail.
B. 7. D. 15 : 103. A. 90. V. 8.

Fam. PLEURONECTIDÆ. (4.)

- Amnotretis rostratus*, *Gunth.* (T.) Sole. B 7. D. 79-81. V. dext. 6-7.; sin. 4. L. lat. 89-90.
Rhombsolea monopus, *Gunth.* (A.) Flounder. B. 5. D. 59-60. V. 6. A. 42-43.
Rhombsolea tapirina, *Gunth.* (A.) Flounder. B. 6-7. D. 64-66. A. 46-50.
Solea liturata? *Rich.* (T.) Richardson's Sole.

Fam. HAPLOCHITONIDÆ. (2.)

- Prototroctes maræna*, *Gunth.* (A.) Freshwater Herring or Cucumber Fish. B. 6. D. 10. A. 19. O. 13. L. lat. 78. L. tr. 19.
Haplochiton Sealii, *Johnston.* (A.) Derwent Smelt. B. 6. D. 8-9. A. 19-20. P. 9-12.

Fam. SCOPELIDÆ. (1.)

- Alepidosaurus ferox*, *Lowe.* (T.) B. 6-7. D. 41-44. A. 14-17. P. 14-15. V. 9-10.

Fam. SALMONIDÆ. (5.)

- Retropinna Richardsons*, *Gill.* (A.Z.) Whitebait. B. 6. D. 11-12 : A. 17-20. P. 11. V. 6. L. lat. 61.
Salmo salar, *L.* (I.) Salmon. B. 11-12. D. 14. A. 11. P. 14. V. 9. L. lat. 120. L. tr. 22-26 : 19-22.
Salmo trutta, *Flem.* (I.) Salmon Trout. B. 11. D. 13. A. 11. P. 15. V. 9. L. 6-120. L. tr. 24-26 : 36-34.
Salmo fontinalis, *Milch.* (I.) Golden Trout.
Salmo fario, *var. Ausonii.* (I.) Brown Trout. D. 13-14. A. 10-11. P. 13. V. 9. L. lat. 120. L. tr. 26-30 : L. tr. 26 : 30.

Fam. GALAXIDÆ. (5.)

- Galaxias truttaceus*, *Cuv. and Val.* (T.) Spotted Trout. B. 9. D. 11. A. 14-15. V. 7. P. 14.
Galaxias auratus, *Johnston.* (D.) Golden Lake Trout. B. 9. D. 11-12. A. 14. V. 1-7. P. 16.
Galaxias attenuatus, *Jenyns.* (A.Z.) Jolly Tail. D. 12. A. 16. V. 7.
Galaxias Weedoni, *Johnston.* (T.) Mersey Jolly Tail. D. 11. A. 14. P. 15.
Galaxias Atkinsoni, *Johnston.* (T.) Pieman Jolly Tail. B. 9. D. 11. P. 13. A. 14. V. 8.

Fam. SCOMBRESOCIDÆ. (1.)

- Hemirhamphus intermedius*, *Cant.* (A.Z.) Gar Fish. D. 15-17. A. 18-20. P. 11.

Fam. CYPRINIDÆ. (3.)

- Carassius vulgaris*, *Nilsson.* (I.) European Carp.
Carrassius auratus, *L.* (I.) Gold Fish.
Tinca vulgaris, *Cuv.* (I.) English Tench.

Fam. GONORHYNCHIDÆ. (1.)

- Gonorhynchus Greyi*, *Rich.* (A.Z.) Sand Eel. B. 4. D. 11-13.
A. 9. V. 9.

Fam. CLUPEIDÆ. (3.)

- Engraulis enchrasicholus* (*var. antipodum*), *L.* The Anchovy.
B. 12-13. D. 16-17. A. 18-20. L. lat. 48-50.
Clupea sprattus, *L.* The Sprat. B. 6-7. D. 15-18. A. 17-20.
V. 7. L. lat. 47-48.
Clupea sagax, *Jenyns.* Pilchard. B. 7. D. 18. A. 18-19. L.
lat. 50-54.

Fam. SYMBRANCHIDÆ. (2.)

- Chilobranchus dorsalis*, *Rich.* (A.) Small Shore Eel.
Chilobranchus rufus, *Macleay.* (A.) Red-banded Shore Eel.

Fam. MURÆNIDÆ. (5.)

- Anguilla Australis*, *Rich.* (A.) Common Eel.
Conger vulgaris, *Cuv.* (A.) Conger Eel.
Conger Wilsoni, *Cast.* (A.Z.) Conger Eel.
Murænichthys breviceps, *Gunth.* (A.)
Congromuræna habenata, *Rich.* (A.Z.) Silver Eel.

Fam. PEGASIDÆ. (1.)

- Pegasus lancifer*, *Kaup.* (A.) Pegasus. D. 5. A. 5. P. 15.
V. 2.

Fam. SYNGNATHIDÆ. (9.)

- Syngnathus semifasciatus*, *Gunth.* (A.) Pipe Fish. D. 38. O. R.
21 + 49.
Syngnathus curtirostris, *Cast.* (A.) Pipe Fish. D. 20-22. O. R.
18 + 42.
Stigmatophora argus, *Rich.* (A.) Pipe Fish. D. 49-52. O. R.
20 + 75.
Stigmatophora nigra, *Kaup.* (A.) Pipe Fish. D. 39-40. O. R.
17 + 42.
Stigmatophora gracilis, *Macleay.* (T.) Pipe Fish. D. 58. O. R.
30 + 56.
Solenognathus spinosissimus, *Gunth.* (A.) Pipe Fish. D. 35.
O. R. 27 + 56.
Phyllopteryx foliatus, *Shaw.* (A.) Leaf-winged Sea Horse.
D. 30. O. R. 18 + 35.
Hippocampus abdominalis, *Kaup.* (T.) Sea Horse. D. 28-31.
Hippocampus breviceps, *Peters.* (A.) Yellow-ringed Sea Horse.
D. 19-21.

Fam. SCLERODERMI. (12.)

- Monocanthus Gunnii, *Gunth.* Dark Brown Leather Jacket D. 34. A. 33.
 Monocanthus convexirostris, *Gunth.* Grey Leather Jacket. D. 34-37. A. 32-35.
 Monocanthus Peronii, *Holland.* Pale Brown Leather Jacket. D. 33-35. A. 33.
 Monocanthus Guntheri, *Macleay.* Tooth-brush Leather Jacket.
 Monocanthus spilomelanurus, *Quoy and Gaim.* Golden Streak-eyed Leather Jacket. D. 30-32. A. 28-32.
 Monocanthus maculosus, *Rich.* Small Brown Leather Jacket. D. 29-33. A. 29-30. P. 12.
 Monocanthus Baudini, *Cast.* Lozenge-scaled Leather Jacket. D. 35. A. 31. P. 13.
 Monocanthus melas, *Gunth.* Black Leather Jacket. D. 34. A. 34.
 Monocanthus rudis, *Rich.* White-banded Leather Jacket. D. 34-35. A. 34.
 Monocanthus hippocrepis, *Quoy and Gaim.* Blue-banded Leather Jacket. D. 35-37. A. 33-36.
 Ostracion auritus, *Shaw.* Trunk Fish. Head spine deflected.
 Ostracion ornatus, *Gray.* Trunk Fish. Head spine erect, pointing out.

Fam. GYMNODONTES. (5.)

- Tetrodon Hamiltoni, *Rich.* Toad Fish.
 Tetrodon Richei, *Frem.* Globe Fish.
 Chilomycterus jaculiferus, *Cuv.* A. Porcupine Fish.
 Atopomycterus nychthemerus, *Cuv.* Slender spined Porcupine Fish.
 Orthogoriscus mola, *L.* Sun Fish. D. 17-18. A. 14-17. C. 12-16. P. 12-13.

SUB-CLASS. CHONDROPTERYGII.

Fam. CHIMÆRIDÆ. (1.)

- Callorhynchus antarcticus, *Lacep.* Elephant Fish.

Fam. CARCHARIDÆ. (4.)

- (Eye with a nictitating membrane. 1 anal and 2 dorsal fins.)
 Carcharius glaucus, *L.* (E.) Blue shark.
 Galeus canis, *Rondel.* (E.) The Tope. School Shark.
 Zygæna malleus, *Shaw.* Hammer-head.
 Mustelus antarcticus, *Gunth.* Smooth Hound. Gummy.

Fam. LAMNIDÆ. (3.)

- (No nictitating membrane. 1 anal and 2 dorsal fins.)
 Lamna cornubica, *Flem.* Porbeagle.
 Odontaspis Americanus, *Mitch.* Grey Nurse.
 Alopias vulpes, *L.* Thrasher.

Fam. NOTIDANIDÆ. (1.)

(1 dorsal only. 1 anal.)

- Notidanus indicus, *Cuv.* Tasmanian Blue Shark

Fam. SCYLLIDÆ. (4.)

(No nictitating membrane. 2 dorsal and 1 anal fin.)

Scyllium maculatum, *Bl.*

Scyllium laticeps, *Dum.*

Parascyllium variolatum, *Dum.*

Crossorhinus barbatus, *L.* Wobbegong.

Fam. CESTRACIONIDÆ. (1.)

(No nictitating membrane. 2 dorsal and 1 anal fin.)

Heterodontus Phillipii, *Lacep.* Port Jackson, or Bull-head Shark.

Fam. SPINACIDÆ. (2.)

(No nictitating membrane. No anal fin.)

Acanthias vulgaris, *Risso.* A. Spotted Spiny Dog.

Acanthias Blainvillii, *Risso.* A. Spiny Dog.

Fam. RHINIDÆ. (1.)

(No anal fin. Pectoral fins large.)

Rhina squatina, *L.* Angel Shark.

Fam. PRISTIOPHORIDÆ. (2.)

(Snout much produced, saw-like.)

Pristiophorus cirratus, *Latham.* (A.) Sawfish. Sets teeth upper jaw, 42.

Pristiophorus nudipinnis, *Gunth.* (A.) Sawfish. Sets teeth upper jaw, 35-39.

RAYS.

Fam. RHINOBATIDÆ. (1.)

Trygonorhina fasciata, *Mull and Henle.* The Fiddler.

Fam. TORPEDINIDÆ. (1.)

Narcine Tasmaniensis, *Rich.* Electric Torpedo. Disc elliptical.

Fam. RAJIDÆ. (1.)

Raja Lemprieri, *Rich.* Thorn-back Skate.

Fam. TRYGONIDÆ. (1.)

Urolophus cruciatus, *Lacep.* Stingaree.

Fam. MYLIOBATIDÆ. (1.)

Myliobatis aquila, *L.* Eagle or Whip-tail Ray.

SUB-CLASS. CYCLOSTOMATA.

Fam. PETROMYZONTIDÆ. (2.)

Mordacia mordax, *Rich.* (A.) Common Lamprey.

Geotria Allporti, *Gunth.* (T.) Pouched Lamprey.

SUB-CLASS LEPTOCARDII.

Fam. CIRROSTOMI. (1.)

Branchiostoma lanceolatum, *Pall.* The Lancelet.

FISHING INDUSTRY.

With a scattered and insulated population of about 150,000 inhabitants, it cannot be expected that the fishing industry of Tasmania can be extensive. Nevertheless it is estimated that there are about 86 boats and 175 men engaged therein. The individuals employed hawking the fish within the two chief towns may be estimated at about 80 in number. Altogether it is estimated that, exclusive of the whaling trade, there are 1,050 persons directly depending upon the local fisheries. Hobart, the capital city, is the chief centre of the industry, its position being favourable in this respect from its proximity to the principal fishing-grounds, and its splendid harbour being accessible in all kinds of weather.

Fully 63 per cent. of the men and boats belong to Hobart, and the men carry on their vocation either in the numerous sheltered indentations or bays in the upper or lower waters of the estuary of the Derwent, or in the exposed open sea between Seymour on the north-east and Port Davey on the south-west. The fishing carried on elsewhere, with the exception of the purely river fishing of the Tamar, is very limited, generally engaged in at odd times by persons who do not devote themselves exclusively to the fishing industry. The Tamar boats are not suited for fishing in the open sea of Bass Straits.

With the exception of three or four decked smacks, the most of the boats employed in the waters of the Derwent, or in the open sea Trumpeter and Barracouta fishing-grounds, are mere open centre-board whaleboats, fitted with fish-wells perforated in direct communication with the sea, and designed to keep the fish alive until sold in the open market in the Fisherman's Dock, Hobart.* The Trumpeter and other fish will feed in such confinement, and the former has been known to live healthily in this way for a period of three months.

The average value of one of these excellent sea-boats† is about £100, and the equipment, in the shape of nets and deep sea lines, say £20; in all, say £120 for each boat. There are usually two or three men to each boat. Even with a small crew of this kind, as much as 40 dozen Kingfish, weighing 12 to 14lbs. each, have been caught in a single night when the fish have been plentiful. Barracouta can be captured in large quantities during the season—January to June. About 24 dozen Barracouta weigh a ton. The fishermen state that, could they be assured of a market, 3s. a dozen for Barracouta or Kingfish would amply repay them,—i.e., about $\frac{1}{4}$ d. a pound.

* Salt water.

† Generally about 37 feet 6 inches long; beam, 7 feet 8 inches; depth, about 3 feet.

The following are additional particulars regarding the average quantity of fish exported each year, which hitherto have been despatched almost wholly to Victoria:—

	Doz.	Weight. lbs.	Average Price.
Trumpeter (<i>Latris hecateia</i>)...	66	3 to 60	1s. per lb.
Perch (<i>Chilodactylus macrop- terus</i>)	123	2 to 7	6s. to 7s. per doz.
Trevally (<i>Neptonemus brama</i>)...	52	1 to 14	8s. to 12s. per doz.
Barracouta (<i>Thyrsites atun</i>)....	1132	9 to 10	3s. per doz.
Kingfish (<i>Thyrsites Solandri</i>)...	1056	12 to 14	3s. per doz.
Conger Eel (<i>Conger vulgaris</i>)...	44	7 to 50	$\frac{1}{2}$ d. per lb.
Crayfish (<i>Palinurus Edwardsii</i>)	923	avg. 4	5s. per score.
Total per year.....	3396		

It is very difficult to estimate the value of fish sales, as no systematic register has been kept for the whole colony. It is probable, since the decline of the Oyster fishery, that the yearly sales do not exceed £10,000 per annum.

The value of boats and equipment at present engaged in the fishing industry of Tasmania may be roughly estimated at about £7,700. This does not embrace the ships employed in the Whale fisheries. The latter industry has declined considerably during the last decade, as shown by the following summary:—

	Average per year, First Quinquennium.	Average per year, Second Quinquennium.
Ships	16	11
Tonnage	4,164	3,055
Men	390	312
Value of Oil.....	£31,281	£19,223

The reason of this falling off is stated to be chiefly owing to the decline in price arising from the introduction of mineral oils. Excessive fishing and consequent scarcity of oil is also referred to as a cause of decline.

FISHING GROUNDS.

Generally, the Fishing Grounds may be divided into three classes:—1. The Home Grounds 2. The Middle Grounds. 3. The Outer, or Open-sea Grounds.

1. *The Home Grounds*, near shore, or in the upper shallows of the estuaries of the Derwent and Tamar.—The fishing grounds at Port Sorell, Bridport, and George's Bay may be included with this division. The fish captured in these situations consist chiefly of Flounders, Mullet, Garfish, Flathead. Crayfish, Prawns, and Oysters are also taken in the Home Grounds.

2. *The Middle Grounds*.—Within this division may be included those fishing reefs and banks lying in the more exposed situations of estuaries—such as Wedge Bay and Adventure Bay, in the Derwent—in depth of water from five to six fathoms. In such localities the grab-all net and ordinary hand-lines are used in the capture of Native Salmon, Silver Bastard, Black and Silver Perch, Carp, Rock Cod, Ling, Conger Eel, etc. The indentations around the Eastern and Western Coasts afford ample scope for following out the industry within the limits of this division, especially so in the many sheltered bays in the neighbourhood of Port Davey and Macquarie Harbour.

3. *The Outer, or Open-sea Grounds*.—These principally are situate in the southern and eastern waters of Tasmania, and generally from 1 to 16 miles off the coast, upon coral banks or reefs 10 to 80 fathoms deep. The latter depth is the limit at which Tasmanian fishermen have been successful with deep sea-lines on the Trumpeter banks. Towards the surface of these open waters the Maori jig is principally used in the capture of the Barracouta, and in the season the line, armed with swivelled chain and stout barbless hook, is employed in the capture of the rapacious but valuable Kingfish.

The fishermen, as a class, are as a rule steady and industrious, and although they do not seem to have any special provision in the shape of Friendly Societies or other providential aids, distress is rare and poverty unheard of. Beyond the provisions for acclimatisation and protection of the European Salmonidæ, the establishment of Oyster beds for breeding purposes, and certain reserves for the protection of natural beds, the Government have also found it necessary to provide measures for the limitation of the sale of unwholesome or undersized fish, and for prescribing the size of mesh for *graball* and *seine nets*. No graball can be used in Tasmanian waters whose mesh is of any size, measured diagonally, between $2\frac{1}{2}$ inches and 4 inches.

The prescribed limits of undersized fish that may be taken or sold are :—

Bastard	...	...	...	...	...	12 inches and over
Real Trumpeter	...	...	...	...	...	13 " " "
Garfish	...	...	...	...	...	8 " " "
Bream	..	...	...	...	...	10 " " "
Flounders...	...	...	...	...	...	9 " " "
Crayfish	...	...	...	...	...	10 " " "

In the case of the introduced Salmonoids, and as regards the Oyster and Flounder, special provisions have been made for their preservation and development in respect of close seasons, modes of capture, and the absolute or partial closing of particular areas as nursery grounds as a means of protection. This was absolutely necessary to ensure the successful acclimatisation of the Salmonidæ first introduced from Europe in the year 1864.

The fishes successfully introduced are *Salmo salar*, *Salmo trutta*, *Salmo fario* var. *Ausonii*, *Salmo fontinalis*, *Tinca vulgaris*, *Cyprinus auratus*, *Cyprinus carassius*, *Perca fluviatilis*.

FISH SOLD IN HOBART FISH MARKET DURING THE YEAR 1888.

Fish.	Quantity	Price.			Value.		
		Max.	Min.	Average	£	s.	d.
Barracoutadoz.	2,410	10s.	7s.6d.	8s.	964	0	0
Bream	9	14s.	8s.	10s.	4	10	0
Carp	103	5s.	3s.	4s.	20	12	0
Eels (Conger).....	70	12s.	10s.	11s.	38	10	0
Flathead	2,241	1s.	1s.	1s.	112	1	0
Flounders	1,126	6s.6d.	4s.	5s.	281	8	0
Garfish	10,229	1s.	5d.	6d.	255	14	6
Gurnet (Rock).....	111	4s.	2s.9d.	3s.	16	13	0
Kingfish	$3\frac{3}{4}$	60s.	60s.	60s.	2	5	0
Ling	21	24s.	3s.	7s.	7	7	0
Mullet	3,202	1s.9d.	4d.	1s.	160	0	0
Mackerel (Horse).....	68	2s.	4d.	1s.	3	8	0
Perch	3,629	5s.	3s.6d.	4s.	735	16	0
Ditto (Red).....	3	4s.	4s.	4s.	0	12	0
Rock Cod.....	2,158	2s.	1s.	2s.	215	16	0
Salmon (Native).....	2,358	1s.	4d.	8d.	78	12	0
Trumpeter (Real).....	447	100s.	20s.	31s.7d.	737	10	0
Ditto (Red Bastard) ..	3,431	5s.6d.	4s.	5s.	857	15	0
Ditto (Silver ditto)..	46	48s.	12s.	17s.6d.	30	12	6
Trevally	75	6s.	2s.	4s.	15	0	0
Whiting.....	16	3s.	1s.	1s.6d.	1	4	0
<i>Crustaceans.</i>	31,753				4,539	6	0
Crayfish score	3,434	5s.	4s.	5s.	858	10	0
<i>Molluscs.</i>							
Cockles bushels	8	5s.	5s.	5s.	2	0	0
					£5,399	16	0

SALMON AND TROUT BREEDING ESTABLISHMENT.

	1882.	1883.	1884.	1885.	1886.	1887.	1888.
Ova introduced from Europe ...	...	...	80,000*	160,000*	...	...	400,000*
Ova exported to other Colonies..	24,000	17,000	2,000	7,500	13,000	12,000	6,000
Salmon Fry liberated in various Rivers, etc.....	3,950	6,600	8,650	31,229 ^d	116,200	33,880	9,000
Licences issued—							
Receipts from Sales of Ova and Licenses...	297	266	216	253	263	269	258
Working Expenses	277 ^a	319	355 ^b	465 ^c	341	296	437

* *Salmo salar*.^a Exclusive of £100 for importation of ova.^b Exclusive of £460 for importation of Ova from England.^c Includes £170, special repairs to troughing.^d Includes 28,128 fry of *S. salar*, *ex ova* per *Yeoman*, from Ireland, hatched at the Plenty.

GENERAL FISHERIES DEPARTMENT.

	1882.	1883.	1884.	1885.	1886.	1887.	1888.
Receipts.....	...	...	...	...	...	...	...
Working Expenses..	...	...	...	935	...	1,369	677

WHALE FISHERIES.

Year.	Vessels employed.		Tonnage.	Value of Fisheries.	Remarks.
	Ships.	Boats.			
1828	3	23	...	£ 11,268	In 1822, 724 tuns oil and 3 tons whale fins were exported. In 1823: 226 casks of oil and 52 pkgs. whalebone were exported.
1829	7	26	...	12,313	
1830	10	42	...	22,065	
1831	9	55	...	33,549	
1832	12	75	...	37,176	
1833	15	105	...	30,620	
1834	23	84	...	56,450	
1835	35	155	...	64,858	
1836	14	48	1,187	57,660	
1837	18	75	2,739	135,210	
1838	19	79	1,999	98,660	FOREIGN.
1839	26	...	3,146	65,600	
1840	27	...	3,224	66,850	Ships. Tonnage.
1841	22	...	3,170	71,600	
1842	18	...	2,842	87,400	
1843	21	...	3,307	74,100	
1844	24	...	4,264	49,840	12 3,838
1845	28	...	4,460	73,300	16 5,518
1846	28	...	4,057	65,150	13 4,825
1847	27	...	4,729	70,000	21 6,890
1848	29	...	6,081	104,000	26 8,497
1849	34	...	7,791	46,117	11 3,803
1850	40	...	9,724	Oil exported. 49,547	9 2,779
1851	26	...	6,538	49,022	14 4,687
1852	18	...	3,999	36,776	18 6,300
1853	7	...	1,903	30,106	2 704
1854	6	...	1,622	27,863	2 737
1855	17	...	3,566	44,110	
1856	33	...	6,975	53,670	
1857	...	...	...	46,211	
1858	...	...	...	49,878	

Year.	Vessels.	Tonnage.	Value of Oil Exported.	No. of Men.
			£	
1859	...	...	63,500	...
1860	...	...	57,350	...
1861	...	...	60,230	...
1862	...	...	60,730	...
1863	...	...	30,175	...
1864	...	...	19,925	...
Produce brought into Port.				
1866	9	2,257	38,000	229
1867	10	2,428	22,800	245
1868	16	3,996	52,546	395
1869	17	4,364	48,910	415
1870	15	3,446	35,880	376
1871	19	4,917	46,350	470
1872	19	4,917	27,420	488
1873	18	4,765	44,000	444
1874	16	4,088	30,780	389
1875	13	3,525	12,465	315
1876	13	3,525	41,740	315
1877	12	3,295	31,605	324
1878	11	3,156	16,920	321
1879	11	3,156	13,425	326
1880	10	2,780	12,045	296
1881	10	2,780	22,120	296
1882	8	2,357	19,096	196
1883	7	2,014	14,685	168
1884	6	1,745	11,715	151
1885	7	2,014	12,600	167
1886	5	1,480	6,150	124
1887	4	1,151	10,450	99
1888	3	783	6,165	70